

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-18 are pending in the present application. Claims 1, 2, 10, and 11 are amended. Claims 1, 2, 10, and 11 are independent claims. The Examiner is respectfully requested to reconsider the various rejections in view of the following Remarks.

Claim for Priority

The Examiner has not recognized Applicants' claim for foreign priority. In view of the fact that the Applicants' claim for foreign priority has been perfected, the Examiner is respectfully requested to acknowledge Applicants' claim for foreign priority in the next Office Action.

Acknowledgment of Information Disclosure Statement

The Examiner has acknowledged the Information Disclosure Statements filed on February 27, 2002 and January 8, 2004. An initialed copy of the corresponding PTO-1449s have been received from the Examiner. No further action is necessary at this time.

Rejection Under 35 U.S.C. § 102

Claims 1-9 stand rejected under 35 USC § 102(e) as being anticipated by U.S. Patent No. 6,556,966 to Gao (hereafter Gao). This rejection is respectfully traversed.

As amended, independent claims 1, 2, 10, and 11 each recites emphasizing periodicity of a fixed code vector from at least one fixed excitation code book by use of both an adaptively determined periodicity emphasis coefficient and a fixed periodicity emphasis coefficient. Applicants respectfully submit that Gao fails to teach or suggest such a feature.

Gao discloses a speech compression system that utilizes one of a plurality of codecs, including a full-rate codec, a half-rate codec, a quarter-rate codec, and an eighth-rate codec. Based on characterization of the speech frame and the desired average bit rate, Gao's system determines one of the codecs to be used for encoding the speech. See col. 7, lines 13-16 and 25-32.

Gao further discloses that the full and half-rate codecs each includes a fixed codebook comprising a plurality of subcodebooks. According to Gao, when either the full or half-rate codec is chosen for encoding speech, the corresponding plurality of subcodebooks are search in order to determine the best subcodebook for encoding the speech into a fixed code vector. See col. 12, lines 45-57.

According to Gao, when searching subcodebooks containing pulse-type fixed code vectors, pitch enhancement may be applied. For instance, Gao discloses that pitch enhancement is applied to the five-pulse subcodebooks 161, 163, and 165 while searching for the best subcodebook and the fixed codebook 390 corresponding to the full-rate codec (col. 15, lines 55-58). Gao also teaches that pitch enhancement may be applied to the pulse-type subcodebooks corresponding to the half-rate codec (col. 25, lines 12-14 -- describing the use of pitch enhancement on the impulse response generated by Type 1 subcodebooks in the half-rate codec). Gao fails to explicitly teach that such pitch enhancement uses both an adaptively determined and a fixed periodicity emphasis coefficient.

In the Office Action (page 3), the Examiner cites col. 13, line 40 - col. 15, line 61, asserting that this section provides a teaching that "pitch/periodicity information is used to determine the best adaptive codebook vector that yields the least long-term error." From this

assertion, Applicants believe that the Examiner might be interpreting Gao's disclosure of calculating pitch correlation and pitch gain (col. 13, line 40 - col. 14, line 40) as teaching the claimed emphasizing of periodicity of a fixed code vector. Applicants respectfully submit that the portion of Gao in col. 13, line 5 - col. 14, line 40 is directed to evaluating characteristic features of each frame of speech in order to characterize that frame as a particular type of speech. Based on this classification, Gao discloses that the proper subcodebook can be chosen from the plurality of available subcodebooks. See col. 13, lines 8-20.

As shown in Fig. 8, step 657, Gao teaches that weighting factors such as pitch correlation are used in the initial search for the best subcodebook (see col. 16, lines 51-67). Thereafter, Gao discloses that the selected subcodebook is searched to find the best vector to be encoded as the fixed code vector v_c (col. 17, lines 1-8). Thus, Gao fails to disclose that the weighting factor such as pitch lag or pitch correlation are used for emphasizing the periodicity of any fixed code vector output from a fixed codebook.

Thus, as stated earlier, Gao fails to disclose using different types (i.e., adaptively determined and fixed) of periodicity emphasis coefficients, as required by independent claims 1 and 2.

Thus, Applicants respectfully submit that claims 1 and 2 are allowable at least for the reasons set forth above. According, it is respectfully submitted that claims 3-9 are allowable at least by virtue of their dependency on claim 2. The Examiner is respectfully requested to reconsider and withdraw this rejection.

Rejection Under 35 U.S.C. § 103

Claims 10-18 stand rejected under 35 USC § 103(a) as being unpatentable over Gao.

Specifically, the Examiner asserts that:

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement features having inverse operation of the claimed encoder in order to recover the encoded signal.

Presumably, the Examiner alleges that Gao discloses all of the features of the speech encoding apparatus and method recited in claims 1-9 and, thus, provides teachings that would make the speech decoding apparatus and method of claims 10-18 obvious to one of ordinary skill in the art.

Applicants wish to point out that MPEP § 2131 sets forth the following.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. V. Union Oil Co. Of California*, 814 F2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the ... claims.” *Richardson v. Suzuki Motor Co.*, 868 F2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

It is respectfully submitted that Gao fails to disclose emphasizing periodicity using an adaptively determined periodicity emphasis coefficient and a fixed periodicity emphasis coefficient, as required by independent claims 10 and 11. The bases for this assertion are similar to those set forth above in connection with independent claims 1 and 2.

It is respectfully submitted that claims 10 and 11 are allowable at least for the above reasons. Furthermore, Applicants submit that claims 12-18 are allowable at least by virtue of their dependency on claim 11. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

Conclusion

In view of the above remarks, Applicants respectfully request the Examiner to reconsider the various rejections and issue a Notice of Allowance in connection with the present application

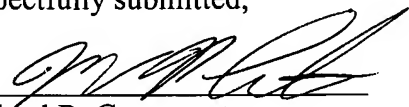
Should the Examiner believe that any outstanding matters remain in the present application, the Examiner is respectfully requested to contact Jason W. Rhodes (Reg. No. 47,305) at the telephone number of the undersigned to discuss the present application in an effort to expedite prosecution.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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